1. (**Canceled**) ~~An optical coupling device operative over a bidirectional data link between at least first and second communicating units, each operative to send and receive data along a common wire of said data transmission link, said device comprising:~~

~~at least first and second optical coupling means, each comprising a photon flux source and a photon flux detector, wherein:~~

~~the photon flux source of said first optical coupling means is commanded in response to a data transmission by said first communicating unit,~~

~~the photon flux source of said second optical coupling means is commanded in response to a data transmission by said second communicating unit,~~

~~the photon flux detector of said first optical coupling means is operative to produce a signal on said data transmission link at said first communicating unit in response to a command of the photon flux source of said second optical coupling means from said second communicating unit, and~~

~~the photon flux detector of said second optical coupling means is operative to produce a signal on said data link at said second communicating unit in response to a command of the photon flux source of said first optical coupling means from said first communicating unit;~~

~~first inhibiting means for inhibiting the photon flux source of said second optical coupling means in response to an activation of the photon flux source of said first optical coupling means; and~~

~~second inhibiting means for inhibiting the photon flux source of said first optical coupling means in response to an activation of the photon flux source of said second optical coupling means.~~

2. (**Currently Amended**) An optical coupling device operative over a bidirectional data link between at least first and second communicating units, each operative to send and receive data along a common wire of said data link, said device comprising:

at least first and second optical coupling means each comprising a photon flux source and a photon flux detector, wherein:

the photon flux source of said first optical coupling means is commanded in response to a data transmission by said first communicating unit,

the photon flux source of said second optical coupling means is commanded in response to a data transmission by said second communicating unit,

the photon flux detector of said first optical coupling means is operative to produce a signal on said data link at said first communicating unit in response to a command of the photon flux source of said second optical coupling means from said second communicating unit, and

the photon flux detector of said second optical coupling means is operative to produce a signal on said data link at said second communicating unit in response to a command of the photon flux source of said first optical coupling means from said first communicating unit;

first inhibiting means for inhibiting the photon flux source of said second optical coupling means in response to an activation of the photon flux source of said first optical coupling means; and

second inhibiting means for inhibiting the photon flux source of said first optical coupling means in response to an activation of the photon flux source of said second optical coupling means,

wherein said bidirectional data link is normally biased to a first state when no data is present, data on said link being expressed by a forcing of said link to a second state,

wherein at least one said communicating unit comprises:

a first connection path for connecting said data link to a source at said second state, said first path having interposed therealong a switch controlled by a data signal to be sent by said unit, whereby said data link can be forced to said second state in response to said data signal to be sent, and

a second connection path for connecting said data link to a source at said second state, said second path having interposed therealong a said photon flux detector responsive to a photon flux from another communicating unit sending data to said communicating unit, said photon flux detector blocking said second path in the absence of a photon flux and making said second path connect said transmission link to said source at said second state in the presence of a photon flux,

wherein [[a]] said photon flux source operative in response to said data signal to be sent by said communicating unit, said photon flux source being active when biased at a level above a threshold value and being connected between a driving power source and said source at said second state via said switch of said first conduction path, said photon flux source thereby being biased above said threshold value when said switch is conducting, and

wherein said inhibiting means comprises means for forcing the biasing level of said photon flux source to be below said threshold value when said second connection path is made to connect said data link to said source at said second state, in the presence of said photon flux on said photon flux detector.

3. (Original) Device according to claim 2, wherein said photon source is a light emitting diode, and wherein said inhibiting means comprises a diode connected in parallel head to tail with said light emitting diode, said diode having a threshold voltage lower than the threshold voltage of said light emitting diode.

4. (Original) Device according to claim 2, said photon source is a light emitting diode, and wherein said inhibiting means comprises a Schottky diode connected in parallel head to tail with said light emitting diode, said diode having a threshold voltage lower than the threshold voltage of said light emitting diode.

5. (Original) Device according to claim 2, said photon source is a light emitting diode, and wherein said inhibiting means comprises passive resistor means.

6. (Original) Device according to claim 2, wherein first and second states are respectively first and second voltage levels, said bidirectional data link being biased to said first voltage level via resistive biasing means connected to a voltage source, said photon flux source and said photon flux detector serving respectively for sending and receiving data.

7. (Original) Device according to claim 2, wherein said first and second states are respectively first and second voltage levels, said first voltage level being higher than said second voltage level, and wherein said photon source is inactive when not sending data.

8. (**Currently Amended**) Device according to claim 2, wherein:

said photon flux source is a light emitting diode,

said photon flux detector is a transistor forming a conductive channel between first and second transistor terminals when detecting a photon flux, said second terminal being connected to ~~said~~ a second voltage level,

said inhibiting means is a Schottky diode,

said first and second states are respectively first and second voltage levels, said first voltage level being higher than said second voltage level,

for a given said communicating unit,

said light emitting diode for sending data is connected in parallel "head-to-foot", the cathode of said light emitting diode being connected to the anode of Schottky diode and the anode of said light emitting diode being connected to said cathode of Schottky diode,

said communicating unit defines first and second nodes (N1 and N2),

said first node being common to:

i) a terminal of ~~said~~ a resistive biasing means that is opposite the terminal connected to a positive power supply voltage,

ii) the anode of said light emitting diode,

iii) the cathode of said Schottky diode, and

vi) said first terminal of said phototransistor,

said second node N2 being common to:

i) said data link, at a data receiving input of ~~said~~ a communicating terminal,

ii) the cathode of said light emitting diode, and

iii) the anode of said Schottky diode.

9. (Original) Device according to claim 2, wherein said photon flux detector is a phototransistor in an open collector configuration.

10. (Original) Device according to claim 2, wherein said photon flux detector is a photodetector in a totem-pole circuit configuration.

11. (Original) Device according to claim 2, wherein said photon flux detector is a photodetector in a totem-pole circuit configuration, said totem-pole circuit providing a bias voltage for said data link DCL, and wherein current limiting means are provided in series with said photon flux source.

12. (**Currently Amended**) Device according to claim 1, comprising first to fourth optical coupling means between said first and second communicating units, the four optical coupling means being divided into two pairs, each pair serving for sending data along one direction only, wherein:

said photon flux source is a light emitting diode,

said photon flux detector is a transistor forming a channel between first and second transistor terminals, said channel being conductive when said detector is detecting a photon flux, said second terminal being connected to ~~said~~ a second voltage level,

said inhibiting means comprise first to fourth tri-state buffers having an enable input responsive to a first logic state to enable an output thereof to conduct, said output being at a voltage level corresponding to a voltage applied at an input thereof, and responsive to a second logic state to produce a high impedance condition at said output,

said first pair comprises said first and second optical coupling means, such that

[[the]] a cathode of [[the]] a light emitting diode of the first optical coupling means is connected to the output of a first tri-state buffer,

[[the]] a cathode of [[the]] a light emitting diode of the second optical coupling means is connected to the output of a second tri-state buffer,

[[said]] a first terminal of [[the]] a first phototransistor of the first optical coupling means is connected to [[the]] a data link at said first unit,

[[said]] a first terminal of [[the]] a second phototransistor of the second optical coupling means is connected to [[the]] an enable ~~inputs~~ input of each of said third and fourth tri-state buffers,

said second pair comprises said third and fourth optical coupling means, such that

[[the]] a cathode of [[the]] a light emitting diode of the third optical coupling means is connected to the output of said third tri-state buffer,

[[the]] a cathode of [[the]] a light emitting diode of the fourth optical coupling means is connected to the output of said fourth tri-state buffer,

[[said]] a first terminal of [[the]] a third phototransistor of said third ~~opto-isolator~~ optical coupling means is connected to [[the]] an enable ~~inputs~~ input of each of said first and second tri-state buffers,

[[said]] a first terminal of [[the]] a fourth phototransistor of the fourth ~~opto-isolator~~ optical coupling means is connected to [[said]] a data link at said second communicating unit,

said first terminal of each of the four ~~opto-isolator~~ phototransistors is connected to a positive power supply via a resistive biasing means, and

[[the]] an anode of each ~~optical coupling means~~ light emitting diode of each optical coupling means is connected to a positive power supply voltage of ~~their~~ its respective communicating ~~units~~ unit.

13. (**Currently Amended**) ~~Device according to claim 1~~ An optical coupling device operative over a bidirectional data link between at least first and second communicating units, each operative to send and receive data along a common wire of said data transmission link, said device comprising:

at least first and second optical coupling means, each comprising a photon flux source and a photon flux detector, wherein:

the photon flux source of said first optical coupling means is commanded in response to a data transmission by said first communicating unit,

the photon flux source of said second optical coupling means is commanded in response to a data transmission by said second communicating unit,

the photon flux detector of said first optical coupling means is operative to produce a signal on said data transmission link at said first communicating unit in response to a command of the photon flux source of said second optical coupling means from said second communicating unit, and

the photon flux detector of said second optical coupling means is operative to produce a signal on said data link at said second communicating unit in response to a command of the photon flux source of said first optical coupling means from said first communicating unit;

first inhibiting means for inhibiting the photon flux source of said second optical coupling means in response to an activation of the photon flux source of said first optical coupling means; and

second inhibiting means for inhibiting the photon flux source of said first optical coupling means in response to an activation of the photon flux source of said second optical coupling means, wherein said photon flux source comprises a light emitting diode, and wherein each of said first and second inhibiting means comprises a Schottky diode electrically coupled with said light emitting diode.

14. (**Currently Amended**) Device according to claim [[1]] 13, wherein said optical coupling means comprises at least one logic type opto-isolator.

15 (**Currently Amended**) Device according to claim [[1]] 13, wherein said optical coupling means comprises at least one linear type opto-isolator comprising an illumination source and first and second matched photodetectors each responsive to an illumination from said source, wherein a detection signal from said first photodetector serves to convey received data and a detection signal from said second photodetector serves to produce a signal for inhibiting an illumination source of the communicating unit receiving said data.

16. (**Currently Amended**) Device according to claim [[1]] 13, wherein said data link is a bidirectional serial type link.

17. (**Currently Amended**) A method of providing an optical coupling over a bidirectional data link between at least first and second communicating units, each operative to send and receive data along a common wire of said data transmission link, comprising the steps of:

providing at least first and second optical coupling means each comprising a photon flux source and a photon flux detector, wherein:

commanding the photon flux source of said first optical coupling means in response to a data transmission by said first communicating unit,

commanding the photon flux source of said second optical coupling means in response to a data transmission by said second communicating unit,

causing the photon flux detector of said first optical coupling means to produce a signal on said data transmission link at said first communicating unit in response to a command of the photon flux source of said second optical coupling means from said second communicating unit,

causing the photon flux detector of said second optical coupling means to produce a signal on said data link at said second communicating unit in response to a command of the photon flux source of said first optical coupling means from said first communicating unit,

inhibiting, by first inhibiting means, the photon flux source of said second optical coupling means in response to an activation of the photon flux source of said first optical coupling means, and

inhibiting, by second inhibiting means, the photon flux source of said first optical coupling means in response to an activation of the photon flux source of said second optical coupling means,

wherein said photon flux source comprises a light emitting diode, and wherein each of said first and second inhibiting means comprises a Schottky diode electrically coupled with said light emitting diode.

18. (**Currently Amended**) A method of providing an optical coupling over a bidirectional data link between at least first and second communicating units, each operative to send and receive data along a common wire of said data link, comprising the steps of:

providing at least first and second optical coupling means each comprising a photon flux source and a photon flux detector, wherein:

commanding the photon flux source of said first optical coupling means in response to a data transmission by said first communicating unit,

commanding the photon flux source of said second optical coupling means in response to a data transmission by said second communicating unit,

causing the photon flux detector of said first optical coupling means to produce a signal on said data link at said first communicating unit in response to a command of the photon flux source of said second optical coupling means from said second communicating unit,

causing the photon flux detector of said second optical coupling means to produce a signal on said data link at said second communicating unit in response to a command of the photon flux source of said first optical coupling means from said first communicating unit,

inhibiting the photon flux source of said second optical coupling means in response to an activation of the photon flux source of said first optical coupling means, and

inhibiting the photon flux source of said first optical coupling means in response to an activation of the photon flux source of said second optical coupling means,

normally biasing said bidirectional data transmission link to a first state when no data is present, data on said link being expressed by a forcing of said link to a second state,

for at least one said communicating unit:

creating a first connection path for connecting said data link to a source at said second state, said first path having interposed therealong a switch controlled by a data signal to be sent by said unit, whereby said data link is forced to said second state in response to said data signal to be sent, and

creating a second connection path for connecting said data link to a source at said second state, said second path having interposed therealong comprising a said photon flux detector responsive to a photon flux from another communicating unit sending data to said communicating unit, said photon flux detector blocking said second path in the absence of a photon flux and making said second path connect said data link to said source at said second state in the presence of a photon flux,

operating said photon flux source in response to said data signal to be sent by said communicating unit, said photon flux source being active when biased at a level above a threshold value and being connected between a driving power source and said source at said second state via said switch of said first conduction path, said photon flux source thereby being biased above said threshold value when said switch is conducting, and

said inhibiting step comprising forcing the biasing level of said photon flux source to be below said threshold value when said second connection path is connecting said link to said source at said second state, in the presence of said photon flux on said photon flux detector.

19. (Original) Method according to claim 18, wherein said photon source is a light emitting diode, and wherein said inhibiting means comprises a diode connected in parallel head to tail with said light emitting diode, said diode having a threshold voltage lower than the threshold voltage of said light emitting diode.

20. (Original) Method according to claim 18, wherein said photon source is a light emitting diode, and wherein said inhibiting means comprises a Schottky diode connected in parallel head to tail with said light emitting diode, said diode having a threshold voltage lower than the threshold voltage of said light emitting diode.

21. (Original) Method according to claim 18, wherein said photon source is a light emitting diode, and wherein said inhibiting means comprises passive resistor means.

22. (Original) Method according to claim 18, wherein first and second states are respectively first and second voltage levels, said bidirectional data link being biased to said first voltage level via resistive biasing means connected to a voltage source, said photon flux source and said photon flux detector serving respectively for sending and receiving data.

23. (Original) Method according to claim 18, wherein said first and second states are respectively first and second voltage levels, said first voltage level being higher than said second voltage level, and wherein said photon source is inactive when not sending data.

24. (**Currently Amended**) Method according to claim 18, wherein:

said photon flux source is a light emitting diode,

said photon flux detector is a transistor forming a conductive channel between first and second transistor terminals when detecting a photon flux, said second terminal being connected to ~~said~~ a second voltage level,

said inhibiting means is a Schottky diode,

said first and second states are respectively first and second voltage levels, said first voltage level being higher than said second voltage level,

for a given said communicating unit,

said light emitting diode for sending data is connected in parallel "head-to-foot", the cathode of said light emitting diode being connected to the anode of Schottky diode and the anode of said light emitting diode being connected to said cathode of Schottky diode,

said communicating unit defines first and second nodes (N1, N2),

said first node being common to:

i) a terminal of ~~said~~ a resistive biasing means that is opposite the terminal connected to a positive power supply voltage,

ii) the anode of said light emitting diode,

iii) the cathode of said Schottky diode, and

vi) said first terminal of said phototransistor,

said second node N2 being common to:

i) said data link, at a data receiving input of ~~said~~ a communicating terminal,

ii) the cathode of said light emitting diode, and

iii) the anode of said Schottky diode.

25. (**Currently Amended**) Method according to claim 17, using first to fourth optical coupling means between said first and second communicating units, the four optical coupling means being divided into two pairs, each pair serving for sending data along one direction only, wherein:

said photon flux source is a light emitting diode,

said photon flux detector is a transistor forming a channel between first and second transistor terminals, said channel being conductive when said detector is detecting a photon flux, said second terminal being connected to ~~said~~ a second voltage level,

said inhibiting means comprise first to fourth tri-state buffers having an enable input responsive to a first logic state to enable an output thereof to conduct, said output being at a voltage level corresponding to a voltage applied at an input thereof, and responsive to a second logic state to produce a high impedance condition at said output,

said first pair comprises said first and second optical coupling means, such that

[[the]] a cathode of [[the]] a light emitting diode of the first optical coupling means is connected to the output of a first tri-state buffer,

[[the]] a cathode of [[the]] a light emitting diode of the second optical coupling means is connected to the output of a second tri-state buffer,

[[said]] a first terminal of [[the]] a first phototransistor of the first optical coupling means is connected to [[the]] a data link at said first unit,

[[said]] a first terminal of [[the]] a second phototransistor of the second optical coupling means is connected to [[the]] an enable ~~inputs~~ input of each of said third and fourth tri-state buffers,

said second pair comprises said third and fourth optical coupling means, such that

[[the]] a cathode of [[the]] a light emitting diode of the third optical coupling means is connected to the output of said third tri-state buffer,

[[the]] a cathode of [[the]] a light emitting diode of the fourth optical coupling means is connected to the output of said fourth tri-state buffer,

[[said]] a first terminal of [[the]] a third phototransistor of said third ~~opto-isolator~~ optical coupling means is connected to [[the]] an enable ~~inputs~~ input of each of said first and second tri-state buffers,

[[said]] a first terminal of [[the]] a fourth phototransistor of the fourth ~~opto-isolator~~ optical coupling means is connected to [[said]] a data link at said second communicating unit,

said first terminal of each of the four ~~opto-isolator~~ phototransistors is connected to a positive power supply via a resistive biasing means, and

[[the]] an anode of each ~~optical coupling means~~ light emitting diode of each optical coupling means is connected to a positive power supply voltage of ~~their~~ its respective communicating ~~units~~ unit.

26. (Original) Method according to claim 17, wherein said data link is a bidirectional serial type link.